

Public Document

No. 60

TWENTY-THIRD ANNUAL REPORT

OF THE

DAIRY BUREAU

OF THE

MASSACHUSETTS BOARD OF AGRICULTURE,

REQUIRED UNDER

CHAPTER 89, SECTION 12, REVISED LAWS.

JANUARY 15, 1914.



BOSTON:

WRIGHT & POTTER PRINTING CO., STATE PRINTERS,
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DAIRY BUREAU—1913.

CHARLES M. GARDNER, WESTFIELD, *Chairman.*

GEORGE W. TRULL, TEWKSBURY, P. O. LOWELL, R. F. D.

OMER E. BRADWAY, MONSON, MASS.

Secretary.

J. LEWIS ELLSWORTH, *Executive Officer and Secretary of the
State Board of Agriculture to May 1, 1913.*

WILFRID WHEELER, *Executive Officer and Secretary of the
State Board of Agriculture from May 1, 1913.*

General Agent.

P. M. HARWOOD.

ADDRESS, ROOM 136, STATE HOUSE, BOSTON.

The Commonwealth of Massachusetts.

REPORT OF THE DAIRY BUREAU.

The work of the Bureau for the year 1913 has been augmented by additional duties attendant upon the carrying out of the resolve of the Legislature for the encouragement of practical dairying. By vote of the Board of Agriculture this work was given over to its Dairy Bureau. The resolve reads as follows:—

CHAPTER 96, ACTS OF 1913.

RESOLVE TO PROVIDE FOR THE ENCOURAGEMENT OF DAIRYING AND THE PRODUCTION OF MILK AND DAIRY PRODUCTS OF SUPERIOR QUALITY.

Resolved, That the state board of agriculture is hereby authorized to provide for the encouragement of practical dairymen in the production of milk and dairy products of superior quality and cleanliness, by offering prizes for the best kept stables, the lowest bacteria counts and best quality of milk, or otherwise, as the board may determine; by demonstrations illustrating the best methods of dairying; by agents who shall instruct the citizens of the commonwealth in matters of stable construction and management and dairy methods in general; by the distribution of literature giving information in regard to the best methods of dairying and especially in regard to the production of clean milk; or in such other manner as the board may deem best for the encouragement of dairying and the production of clean milk. For travelling, incidental, administrative and office expenses necessarily incurred in carrying out the purposes of this resolve the said board may expend a sum not exceeding five thousand dollars annually for three years, beginning with the year nineteen hundred and thirteen, and if any part of the said five thousand dollars remains unexpended at the close of any one year, the balance may be expended in the following year. [Approved May 26, 1913.]

This work — encouragement of practical dairying — opens up a field of great interest. During recent years, in milk-shipping sections of the State, many farmers have either curtailed their business, given up milk production,¹ sold their farms or changed their system of farming. The farms when sold have usually gone into the hands of city people for country homes or for so-called fancy farming. Poles and other immigrants have not purchased dairy farms to any extent, preferring the onion and tobacco farms of the Connecticut valley or truck farms adjacent to large cities.

We are of the opinion that the great hope for the future of Massachusetts dairying lies in the production of clean, wholesome milk for near-by markets for a price higher than that paid for railroad market milk from northern New York, northern New England and Canada, which cannot be safely sold without pasteurization. Whatever may be done in the way of inspection and supervision in the future, long-hauled milk sold in large cities will continue to be pasteurized, — or treated in some equal or superior manner, — in order that the public health may be safeguarded and the milk contractors and dealers protected. We believe that inspection of dairies, while necessary and important, is frequently overestimated in the public mind, and that the real good that comes from these inspections is the simple removal of unsound animals and of unsanitary conditions without frills, fads and unnecessary requirements. Dairy inspection is not a guarantee of cleanliness. The best way in which clean milk can be secured from dairies three hundred and sixty-five days in the year is to pay for it on the basis of cleanliness and freedom from contamination.

With the limited sum of \$5,000 per annum at our disposal, we cannot do all that we would like. In fact, we can only make a beginning in a few ways. We believe that by encouragement and incidental instruction, habits of dairy-men, however good, can be improved. In carrying out this idea we have during the year offered prizes aggregating \$3,000, \$2,550 of which was for clean milk, and \$450 for the protection of dairies from flies. For convenience, the State

¹ In 1890 there were assessed in Massachusetts 200,658 cows; in 1906, 181,816 cows; in 1912, 161,608; and in 1913, 151,276 cows. This shows a decrease, from 1890 to 1913, of 49,382 cows, from 1906 to 1913, of 30,540; and from 1912 to 1913, of 10,332.

was divided into two sections, — eastern and western. In the eastern section there were 37 entries. These dairies were examined in the month of September. Answers to pertinent questions were obtained, photographs of premises taken, and samples of milk run through absorbent cotton, and the cottons examined later for sediment. The prizes were awarded September 30 and were made public at the Brockton Fair. In the western section there were 114 entries. These dairies were examined in the month of October and the prizes awarded later. The names of the winners were announced at the State Board of Agriculture meeting at Springfield, December 1. In the contest for dairies best protected from flies there were 18 entries. These dairies were examined early in October, and the announcement of the prizes was made at the Springfield meeting. So far as we know, these were the first prizes ever offered along these lines, but the results have exceeded our most sanguine expectations. The successful contestants have cheerfully signed the following expression of determination: —

Consideration of the generosity of the Commonwealth in offering liberal prizes for the production of clean milk, together with my own interest in the matter, leads me to express my determination to continue the means adopted in this contest, and to add thereto from time to time such improvements as appear practical, to the end that the present high standing of Massachusetts milk may be maintained and its quality improved.

Many contestants have voluntarily stated that they learned more about the production of clean milk in this contest than they ever knew before.

For details in the protection from flies contest, reference is made to Circular No. 10 of the series now being published by the State Board of Agriculture. Further details in regard to the clean milk contest will be found in Circular No. 13 of the same series.

It is hoped that during the coming year even more far-reaching results may be realized from plans already in contemplation.

The Bureau takes this opportunity to express its appreciation and thanks for the services of Prof. Samuel C. Prescott of the Massachusetts Institute of Technology,

and Mr. E. H. Forbush of the State Board of Agriculture, as judges who acted without pay in the clean milk and protection from flies contests, respectively; also to milk inspectors S. C. Downs and J. A. Gamble of Springfield, G. L. Berg of Worcester, Fred E. Marsh of Ware, Clifford W. Shippee of Gardner, and others who did much to awaken local interest, besides furnishing valuable assistance in the clean milk contest; also to Mr. Fred F. Walker, Commissioner of Animal Industry, and the inspectors of animals throughout the Commonwealth, for valuable assistance in obtaining information relating to the dairymen in Massachusetts.

The police work of the Board for 1913 has resulted in 149 cases in court and 146 convictions. Seven of these cases were for violation of the milk laws, 54 for the violation of the renovated butter law and 88 for the violation of the oleomargarine laws.

In the educational work, 17 lectures have been given by the general agent. These lectures have explained the food value of milk, advocated its increased consumption and more economical distribution, and that its price be based upon quality and cleanliness. We believe these to be among the basic essentials in bringing to dairymen a more prosperous condition, and to consumers greater security in their milk supply. Most of the creameries, and many dairy plants in the State, have been visited during the year, and special exhibits of the work of the Bureau were made at Brockton and Springfield.

Bulletins on "Dairying in Denmark," edited by P. M. Harwood, "Cost of Milk Production," by Prof. Fred Rasmussen, "What it Costs to produce Milk in New England," by P. M. Harwood, with extracts from special articles by Mr. Elmer D. Howe, Prof. John M. Trueman, Prof. Fred Rasmussen, and Dr. Joseph B. Lindsey, have been published, and statistics relating to milk producers and breeders of pure-bred dairy stock have been gathered.

Early in the year the general agent was appointed by the Governor, together with Dr. Mark W. Richardson of the State Board of Health and Gen. Charles W. Wood of Worcester, to attend a milk conference in New York. This conference

voted that the main control of the milk business should remain in the hands of the agricultural departments of the several States represented, and the milk inspection divided between agricultural and health authorities. Later in the year the general agent was appointed by the governor to attend a conference of the United States department and State departments for bringing about more uniform laws and regulations in the control of dairy and food supplies.

MILK CONSUMPTION.

It is gratifying to know that the consumption of milk in Greater Boston is gradually increasing from the low ebb reached in 1911. The figures of the Massachusetts Board of Railroad Commissioners show the receipts of railroad milk to be 107,306,849 quarts. (See table on page 16.)

CONDENSED MILK.

The Chamber of Commerce gives receipts of condensed milk, including evaporated cream in Boston for 1913, as 3,484 barrels and 321,883 cases, as against 2,304 barrels and 321,946 cases in 1912. This indicates but slight increase in the consumption of these products during the year. (See table on page 16.)

MILK INSPECTORS.

The number of milk inspectors in the State has been increased during the year, and their high reputation for efficiency maintained. Our thanks are due to many for their kindly co-operation and assistance at all times. A list of these inspectors will be found on pages 21-23.

OLEOMARGARINE.

The number of retail oleomargarine licenses in force in the State November, 1912, was 846, while in 1913 it was 884, showing an increase of 38 oleomargarine licenses in Boston. As reported by the Chamber of Commerce in 1912, it was 140,040 packages, while in 1913 it was 127,994, showing a decrease of 12,046. Oleomargarine produced in the

United States in 1912 was 128,601,053 pounds, while in 1913 it was 145,227,872, showing an increase of 16,626,829. This increase in the manufacture of oleomargarine, and its apparent increased consumption in the United States, is undoubtedly due to the high cost of living, but the decrease in number of packages of oleomargarine wholesaled in Boston, together with the but slight increase in number of Massachusetts licenses, indicates that the majority of people in this State still prefer to use genuine butter. (For further details, see tables on page 13.)

RENOVATED BUTTER.

In 1912 there were 46,387,398 pounds of renovated butter produced in the United States, while in 1913 there were 38,354,762, showing a decrease of 8,032,636 pounds in twelve months, which indicates a decline of these goods in public favor. (See table on page 14.)

BUTTER.

The annual statement of the Boston Chamber of Commerce shows an increase in the consumption of butter, Boston output, during 1913 of 1,312,224 pounds, which is a fairly normal increase. The average wholesale price of 31.7 cents for the year, against 31.2 cents for 1912, has had no apparent effect upon the butter consumption. (Details will be found on pages 14 and 15.)

PERSONNEL OF THE BUREAU.

The personnel of the Bureau is as follows: Charles M. Gardner of Westfield, chairman, George W. Trull of Tewksbury and Omer E. Bradway of Monson. The executive force, agents and analysts, etc., are as follows: executive officer and secretary, Wilfred Wheeler;¹ general agent, P. M. Harwood; analysts, B. F. Davenport, M.D., Boston, and F. W. Farrell, Emerson Laboratory, Springfield; agent, A. W. Lombard; and five others have been temporarily employed.

¹ Since May 1, 1913.

SUMMARY OF POLICE WORK.

Total number of inspections,	18,161
Number of inspections where no samples were taken,	4,609
Number of samples of butter, oleomargarine and condensed milk, all purchased,	3,458
Number of samples of milk and cream,	94
Cases entered in court,	14
Addresses by general agent and others,	17

Cases prosecuted during the twelve months ending Nov. 30, 1913, by months and courts, with law violated, and results, are as follows: —

COURT.	Month.	Num-ber.	Law violated.	Con- victed.	Dis- charged.
Lynn Police,	December, .	4	4 renovated butter,	4	—
Malden, First Eastern Mid- dlesex District.	December, .	2	2 oleomargarine, .	2	—
Gloucester, Eastern Essex District.	December, .	2	2 oleomargarine, .	2	—
Worcester, Central District,	December, .	4	4 oleomargarine, .	4	—
New Bedford, Third Bristol District.	January, .	38	18 renovated butter, 20 oleomargarine.	34	4
Holyoke Police,	January, .	3	3 oleomargarine,	3	—
Lawrence Police,	February, .	16	6 renovated butter, 10 oleomargarine.	16	—
East Brookfield, Western Worcester District.	March, .	2	2 renovated butter,	2	—
Salem, First Essex District,	March, .	2	2 oleomargarine, .	2	—
Lynn Police,	March, .	6	2 renovated butter, 4 oleomargarine.	6	—
Worcester, Central District,	March, .	7	1 renovated butter, 6 oleomargarine.	7	—
Webster, First Southern Worcester District.	March, .	4	4 renovated butter,	4	—
Boston Municipal,	April, . .	2	2 oleomargarine, .	2	—
Haverhill, Northern Essex District.	April, . .	16	8 renovated butter, 8 oleomargarine.	16	—
Athol, First Northern Worcester District.	April, . .	4	4 oleomargarine, .	4	—
Gardner, First Northern Worcester District.	April, . .	7	3 renovated butter, 4 oleomargarine.	7	—
Boston Municipal, Charles- town District.	April, . .	1	1 oleomargarine, .	1	—
Springfield Police,	April, . .	3	3 oleomargarine, .	3	—
Boston Municipal, Brighton District.	May, . .	2	2 renovated butter,	2	—
Lowell Police,	May, . .	7	7 oleomargarine, .	7	—
Salem, First Essex District,	May, . .	2	2 renovated butter,	2	—
Worcester, Central District,	May, . .	2	2 cream, . .	2	—
Worcester, Central District,	June, . .	1	1 cream, . .	1	—

¹ There were 79 extra samples taken during the year, therefore this number is less than the sum of the next three items.

COURT.	Month.	Num-ber.	Law violated.	Con-victed.	Dis-charged.
Haverhill, Northern Essex District.	July, . . .	2	2 cream, . . .	2	-
Lawrence Police, . . .	November, .	4	2 milk, 2 oleomargarine.	4	-
Quincy, East Norfolk District.	November, .	2	2 renovated butter,	2	-
Chelsea Police, . . .	November, .	2	2 oleomargarine, .	2	-

NOTE. — The Bureau is indebted to the milk inspectors of Massachusetts for assistance which has resulted in court cases.

The charges in the several cases entered in court for the year ending Nov. 30, 1913, have been as follows: —

Selling renovated butter in unmarked packages,	54
Selling oleomargarine without being registered,	3
Selling oleomargarine in unmarked ¹ packages,	11
Furnishing oleomargarine in restaurants, etc., without notice to guests,	73
Selling milk below standard,	2
Selling cream below standard,	5
Selling oleomargarine without sign in store,	1

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The following table shows the inspections without samples, and the number of samples taken during the past eleven years: —

YEARS.	Inspections without Samples.	Samples.
1903-12 (inclusive),	51,682	14,575
1913,	4,609	3,552
Total for eleven years,	56,291	18,127
Average,	5,117	1,647

¹ In these cases oleomargarine was sold when butter was asked for, but the charge was made in this way for convenience.

TABLES RELATING TO OLEOMARGARINE.

The number of United States oleomargarine licenses in force in Massachusetts in November, 1912 and 1913, is as follows: —

	1912.	1913.
Wholesale licenses in Boston,	18	19
Wholesale licenses in other cities,	9	12
Totals,	27	31
Retail licenses in Boston,	124	121
Retail licenses in other cities and towns,	722	763
Totals,	846	884

The following figures, taken from the annual report of the United States Commissioner of Internal Revenue for 1913, show the production, withdrawn tax paid, and withdrawn for export of the two classes of oleomargarine, as defined by act of May 9, 1902, covering the period of eleven years, since it went into effect on July 1, 1902: —

Oleomargarine (Pounds).

YEAR.	PRODUCT TAXED AT RATE OF 10 CENTS PER POUND.			PRODUCT TAXED AT RATE OF ¼ CENT PER POUND.		
	Produced.	With- drawn Tax paid.	With- drawn for Export.	Produced.	With- drawn Tax paid.	With- drawn for Export.
1903,	5,710,407	2,312,493	3,334,969	67,573,689	66,785,796	151,693
1904,	3,785,670	1,297,068	2,504,940	46,413,972	46,397,984	123,425
1905,	5,560,304	3,121,640	2,405,763	46,427,032	46,223,691	137,670
1906,	4,888,986	2,503,095	2,422,320	50,545,914	50,536,466	78,750
1907,	7,758,529	5,009,094	2,695,276	63,608,246	63,303,016	129,350
1908,	7,452,800	4,982,029	2,522,188	74,072,800	73,916,869	109,480
1909,	5,710,301	3,275,968	2,403,742	86,572,514	86,221,310	112,958
1910,	6,176,991	3,416,286	2,767,195	135,685,289	135,159,429	97,575
1911,	5,830,995	2,764,971	3,054,344	115,331,800	115,448,006	91,750
1912,	6,235,639	3,174,331	3,044,122	122,365,414	121,945,038	106,160
1913,	6,520,436	4,090,658	2,417,973	138,707,426	138,242,548	59,686
Totals,	65,631,058	35,947,633	29,572,832	947,304,096	944,180,453	1,198,497

RENOVATED BUTTER.

The following figures, from the same source as the preceding table, show the production and withdrawn tax paid of renovated butter, 1902-13:—

Renovated Butter (Pounds).

YEAR.	Production.	Withdrawn Tax paid.
1903,	54,658,790	54,223,234
1904,	54,171,183	54,204,478
1905,	60,029,421	60,171,504
1906,	53,549,900	53,361,088
1907,	62,965,613	63,078,504
1908,	50,479,489	50,411,446
1909,	47,345,361	47,402,382
1910,	47,433,575	47,378,446
1911,	39,292,591	39,352,445
1912,	46,387,398	46,413,895
1913,	38,354,762	38,285,114
Totals,	554,668,083	554,282,536

BUTTER.

The following table shows the average quotation for the best fresh creamery butter, in a strictly wholesale way, in the Boston market for the last ten years, as compiled by the Boston Chamber of Commerce:—

MONTH.	1913. Cents.	1912. Cents.	1911. Cents.	1910. Cents.	1909. Cents.	1908. Cents.	1907. Cents.	1906. Cents.	1905. Cents.	1904. Cents.
January, . . .	33.9	36.9	28.8	33.5	30.9	29.7	30.4	25.2	28.0	22.7
February, . . .	34.9	32.5	26.9	30.5	30.0	32.1	31.7	25.2	31.6	24.6
March, . . .	36.4	32.1	24.2	32.0	29.1	30.2	30.2	25.5	28.0	24.1
April, . . .	34.5	32.7	21.7	31.5	27.9	28.4	32.2	22.2	29.1	21.6
May, . . .	28.7	30.4	22.8	29.0	26.6	24.1	31.4	19.9	23.9	19.9
June, . . .	28.2	27.9	24.2	28.2	26.4	24.5	24.3	20.2	20.7	18.4

MONTH.	1913. Cents.	1912. Cents.	1911. Cents.	1910. Cents.	1909. Cents.	1908. Cents.	1907. Cents.	1906. Cents.	1905. Cents.	1904. Cents.
July, . . .	27.5	28.1	26.0	28.6	27.2	23.6	25.9	21.0	20.6	18.3
August, . . .	28.2	27.1	27.2	29.6	28.2	24.5	26.0	23.8	21.6	19.1
September, . .	31.3	29.1	27.7	29.6	31.3	25.3	29.2	25.6	21.2	20.8
October, . . .	31.2	31.0	30.4	29.4	31.7	27.5	29.9	26.9	22.1	21.5
November, . .	31.9	32.9	32.5	30.2	31.4	29.5	27.1	27.6	23.0	24.1
December, . .	33.8	34.0	35.0	30.0	32.9	31.0	27.5	30.7	23.9	25.7
Averages, . .	31.7	31.2	27.3	30.2	29.5	27.5	28.8	24.48	24.47	21.73

The Chamber of Commerce figures regarding the butter business in Boston for 1912 and 1913 are as follows:—

	1913. Pounds.	1912. Pounds.
Carried over in storage,	8,340,102	6,612,966
Receipts for January,	2,314,428	3,282,660
February,	2,870,790	3,256,729
March,	3,365,435	3,565,555
April,	4,433,969	3,905,002
May,	8,659,092	7,093,321
June,	12,938,572	12,225,290
July,	12,323,011	13,030,718
August,	8,333,419	8,346,787
September,	6,096,706	6,051,810
October,	4,241,941	4,961,020
November,	2,876,134	3,717,156
December,	3,251,088	2,263,182
Total supply,	80,044,687	78,222,196
Exports for year, deduct,	200	24,005
Net supply,	80,044,487	78,198,181
Storage stock December 27, deduct,	8,874,204	8,340,102
Consumption for year,	71,170,283	69,858,059

RECEIPTS OF CONDENSED MILK.

The Chamber of Commerce figures regarding the receipts of condensed milk at Boston for 1912 and 1913 are as follows:—

	1913. Barrels.	1913. Cases. ¹	1912. Barrels.	1912. Cases. ¹
January,	147	19,621	318	34,212
February,	167	24,862	174	32,066
March,	260	30,670	193	16,247
April,	170	22,193	375	20,614
May,	96	21,946	107	23,578
June,	320	38,300	187	27,080
July,	269	39,502	217	37,387
August,	137	22,902	146	44,461
September,	254	28,693	76	14,838
October,	1,328	25,895	262	22,240
November,	130	17,694	27	27,144
December,	206	29,605	222	22,079
Totals,	3,484	321,883	2,304	321,946

¹ Includes evaporated cream.

MILK.

Milk brought into Boston by Different Railroads, Dec. 1, 1912, to Nov. 30, 1913, as reported by the Railroad Commissioners (Quarts).

DATE.	Boston & Albany.	Boston & Maine.	New York, New Haven & Hartford.	Total.
1912.				
December,	651,882	6,916,685	1,422,419	8,990,986
1913.				
January,	429,311	7,179,151	1,437,881	9,046,343
February,	380,481	6,693,732	1,439,468	8,513,681
March,	444,513	7,377,392	1,546,405	9,368,310
April,	442,251	7,438,618	1,475,735	9,356,604
May,	500,943	7,732,448	1,748,368	9,981,759
June,	465,740	7,520,704	1,662,461	9,648,905
July,	451,915	7,430,444	1,725,201	9,607,560
August,	436,862	6,820,345	1,612,586	8,869,793
September,	490,677	6,151,288	1,550,894	8,192,859
October,	550,381	5,913,873	1,594,625	8,058,879
November,	586,978	5,578,902	1,505,290	7,671,170
Totals,	5,831,934	82,753,582	18,721,333	107,306,849

*Comparative List of Number of Cows assessed in Massachusetts, May 1,
1906, April 1, 1912, and May 1, 1913.*

COUNTIES.	1906.	1912.	1913.	DECREASE.		INCREASE.	
				1906-13.	1912-13.	1906-13.	1912-13.
Barnstable, . . .	2,448	2,305	2,251	197	54	-	-
Berkshire, . . .	17,404	16,463	15,317	2,087	1,146	-	-
Bristol, . . .	13,702	13,552	12,803	899	749	-	-
Dukes, . . .	656	583	588	68	-	-	5
Essex, . . .	17,131	14,529	13,456	3,675	1,073	-	-
Franklin, . . .	12,715	11,941	10,986	1,729	955	-	-
Hampden, . . .	12,096	10,504	9,486	2,610	1,018	-	-
Hampshire, . . .	14,383	12,261	11,467	2,916	794	-	-
Middlesex, . . .	29,508	25,932	24,060	5,448	1,018	-	-
Nantucket, . . .	378	419	453	-	-	75	34
Norfolk, . . .	11,200	10,095	9,766	1,434	329	-	-
Plymouth, . . .	8,465	7,765	7,613	852	152	-	-
Suffolk, . . .	1,186	1,015	1,138	48	-	-	123
Worcester, . . .	40,544	34,244	31,892	8,652	2,352	-	-
Totals, . . .	181,816	161,608	151,276	30,615	10,494	75	162

List of Massachusetts Farms making Milk of Superior Quality and Cleanliness and selling their Product higher than the Regular Market Price.

LOCATION, FARM.	Owner and Manager.	Approximate Number of Cows.	Where marketed.
Agawam, Reilly Farm, . . .	J. J. Reilly, owner and manager.	17	Springfield. ¹
Agawam, Colonial Farm, . . .	H. E. Bodurtha, owner and manager.	12	Springfield.
Agawam, Elm Shade Dairy, . . .	S. S. & E. F. Bodurtha, owners and managers.	25	Springfield.
Amherst, . . .	H. M. Thompson, owner and manager.	25	Holyoke.
Amherst, Groff & Simmons' farm.	Groff & Simmons, owners and managers.	34	Amherst.
Andover, Arden Farm, . . .	Wm. M. Wood, owner, J. M. Putnam, superintendent, Austin C. Huggins, manager of creamery.	55 ²	Andover, Lawrence, Woburn and Boston.
Andover, Shattuck Farms, . . .	F. Shattuck, owner and manager.	50	Lawrence.

¹ Several out-of-State farms also furnish milk of this class in Springfield.

² Twenty-five cows in Andover and 30 in New Hampshire.

List of Massachusetts Farms making Milk of Superior Quality and Cleanliness and selling their Product higher than the Regular Market Price — Continued.

LOCATION, FARM.	Owner and Manager.	Approximate Number of Cows.	Where marketed.
Auburn, Wellswood Farm, .	Geo. O. Keep, owner and manager.	30	Worcester.
Barnstable, Bay Farm, . .	H. C. Everett, owner and manager.	-	Barnstable.
Barre, Highland View Farm, .	D. A. Howe, owner, W. E. Howe, manager.	25	Worcester.
Bolton, Rocky Dundee Farm, .	R. H. Randall, lessee and manager.	20	Clinton.
Boston, Walker-Gordon Farm, 1106 Boylston Street.	Walker-Gordon Laboratory Company, owner, John Nichols, manager.	100	Boston and vicinity.
Brockton, Montello Station, Dutchland Farm.	Fred F. Field, owner, Earl D. Upton, manager.	70	Brockton.
Chilmark, West Tisbury, P. O. Oakview Farm.	J. F. Adams, owner, .	17	Vineyard Haven and Edgartown.
Dighton, Rock Farm, . . .	J. W. Earle, owner, Ralph Earle, manager.	15	Fall River. ¹
Dorchester, Codman Farm, .	Watson B. Fearing, owner and manager.	58	Boston.
East Lynn,	J. D. Coombs, lessee and manager.	3	East Lynn.
Fairhaven, Dana Farm, . .	Eliza N. and Edith Dana, owners and managers.	52	Fairhaven, Marion and Mattapoisett (in summer).
Framingham, Millwood Farm, .	Mrs. E. F. Bowditch, owner, J. P. Bowditch, manager, F. E. Barrett, superintendent.	178	Boston and Wellesley.
Framingham, Waverney Farm, .	Reginald W. Bird, owner, A. E. White, manager.	50	Boston.
Franklin, Ray Farm, . . .	E. K. Ray, estate owner, Joseph G. Ray, trustee and manager.	100	Boston, by Elm Farm Company.
Gloucester, Howard P. Lane's farm.	Howard P. Lane, owner and manager.	50	Gloucester.
Gloucester, H. Wallace Lane's farm.	H. Wallace Lane, owner and manager.	30	Gloucester.
Gloucester, Peter Hadstrom's farm.	Peter Hadstrom, owner and manager.	5	Gloucester.
Granby, C. W. Ball's farm, .	C. W. Ball, owner and manager.	29	Holyoke.
Greenfield, Wayside Farm, .	Frank H. Reed, owner, Mr. Purrington, manager.	25	Greenfield.
Hamilton, Miles River Farm, .	Maxwell Norman, owner and manager, C. E. Johnson, superintendent.	140	Boston.
Hardwick, Mixer Farm, . .	Mary A. Mixer, owner, Dr. Samuel J. Mixer, manager, S. R. Parker, superintendent.	165	Boston.
Haverhill (Bradford District), J. B. Sawyer's farm.	J. B. Sawyer, owner and manager.	-	Haverhill.
Haverhill (Bradford District), Cedar Crest Farm.	C. Herbert Poor, owner and manager.	20	Haverhill. ²
Haverhill, North Broadway Milk Farm.	E. A. Emerson, owner and manager.	35	Haverhill.
Haverhill (P. O. East Haverhill), Fred Kimball's Farm.	Fred Kimball, owner, Leonard Kimball, manager.	35	Haverhill.

¹ Several Rhode Island farms also furnish milk of this class in Fall River.

² Two New Hampshire dairymen, Geo. B. Freeman and Herbert N. Sawyer, also sell milk of this class in Haverhill.

List of Massachusetts Farms making Milk of Superior Quality and Cleanliness and selling their Product higher than the Regular Market Price — Continued.

LOCATION, FARM.	Owner and Manager.	Approximate Number of Cows.	Where marketed.
Holyoke, Whiting Farm, .	W. F. Whiting, owner, John F. Richardson, manager.	20	Holyoke.
Longmeadow, Hillbrow Farm, .	H. M. Burt, owner and manager.	20	Springfield.
Lowell, Hood Farm, . . .	C. I. Hood, owner, J. E. Dodge, manager.	120	Lowell.
Ludlow, E. E. Chapman's Farm,	Edward E. Chapman, owner and manager.	22	Ludlow and Indian Orchard.
Lunenburg, Sunnyside Farm, .	Geo. M. Proctor, owner, Fred A. Miller, manager.	48	Fitchburg.
Marlborough, Fairview Farm, .	Elmer D. Howe & Son, owners and managers.	10	Marlborough.
Medford, Mystic Valley Farm, 75 Arlington Street.	John J. Mulkevin, owner and manager.	16	Medford.
Medford, Hillside Farm, 20 Gow Street.	Alberton Harris, owner and manager.	10	Medford.
Methuen, Bragdon Farms, .	E. L. Bragdon, owner and manager.	30	Lawrence.
Methuen, Cox Farms, . . .	Louis Cox, owner, L. Coburn, manager.	31	Lawrence.
Methuen, Howe Farm, . . .	E. D. Taylor, owner and manager.	50	Lawrence.
Methuen, Spring Valley Farms,	Fred Miller, owner and manager.	50	Lawrence.
Methuen, S. W. Williams' farm,	S. W. Williams, owner and manager.	30	Lawrence.
Millis, Lowland Farm, . . .	E. F. Richardson, owner and manager.	25	Boston.
Milton, Highland Farm, . . .	Patriquin & Newton, lessees, George Patriquin, manager.	65	Milton.
Needham, K. E. Webb's Farm,	Keneth C. Webb, owner and manager.	31	Needham.
Norfolk, Meadowside Farm, .	T. D. Cook & Co., owners and managers.	35	Boston.
North Amherst, The Elms, . .	R. D. Dickinson, owner and manager.	30	Amherst.
Northampton, W. J. LaFleur's farm.	W. J. LaFleur, owner and manager.	11	Northampton.
Oak Bluffs, Woodsedge Farm, .	F. W. Chase, owner and manager.	20	Oak Bluffs.
Paxton, E. G. Richard's farm, .	E. G. Richards, owner and manager.	40	Worcester, by C. Brigham & Co.
Paxton, Echo Farm,	W. J. Woods, owner, Joseph Graham, manager.	40	Worcester, by C. Brigham & Co.
Peabody, Maplehill Farm, . .	-	-	Boston, by H. P. Hood & Sons. ¹
Pittsfield, E. W. Page's farm, .	E. W. Page, owner and manager.	8	Pittsfield.
Pittsfield, Mr. Bardwell's farm,	Mr. Bardwell, owner and manager.	14	Pittsfield.
Pittsfield, Abby Lodge, . . .	A. W. Cooley, owner, Mr. Carlson, manager.	35	Boston.
Saugus, Oaklandvale Farm, . .	Frank P. Bennett, owner and manager.	112	Lynn.
South Lincoln, South Lincoln Dairy Company.	South Lincoln Dairy Company, owners, W. A. Blodgett, manager.	250	Boston, Cambridge and Brookline.
South Natick, Carver Hill Farm.	Carver Hill Farms Inc., Austin Potter.	75	Boston, Wellesley, Natick, Needham and Dover.
Sherborn,	H. N. Brown, owner and manager.	50	Boston.
Sherborn,	J. M. Merriam, owner and manager.	40	Boston.

¹ H. P. Hood & Sons also distribute this class of milk from 10 farms in New Hampshire.

List of Massachusetts Farms making Milk of Superior Quality and Cleanliness and selling their Product higher than the Regular Market Price — Concluded.

LOCATION, FARM.	Owner and Manager.	Approximate Number of Cows.	Where marketed.
Sterling, Twin Oaks Farm (P. O. Pratt's Junction).	Rodney Monk, owner and manager.	75	Milk, Boston; cream, Worcester.
Stoughton, Tobey Farm, . . .	E. B. Hutchins, owner and manager.	15	Brockton.
Taunton, Geo. Soper's farm, .	George Soper, owner and manager.	30	Taunton.
Westwood, Fox Hill Farm, .	Joshua Crane, owner, L. W. Jackman, manager.	100	Boston.
West Newton and Barre, Wauwinet Farm.	Geo. H. Ellis, owner, P. F. Staples and R. M. Hardy, managers.	400	Boston, Brookline and Newton.
Warren, Maple Farm, . . .	J. R. Blair, owner, R. A. Siddens, manager.	27	Boston, by C. Brigham Company.
Worcester, Pleasant View Farm,	Warren C. Jewett, owner and manager.	40	Worcester.
Worcester,	Lewis J. Kendall, owner and manager.	40	Worcester.
Worcester, Intervale Farm, .	J. Lewis Ellsworth, owner and manager.	14	Worcester.
Worcester, Village Farm, . .	H. B. Prentice, owner and manager.	30	Worcester.

NOTE. — Deerfoot Farm Dairy, office 9 Bosworth Place, Boston, with milk depots at both Southborough and Northborough, sells milk of superior quality and cleanliness at a price above that of ordinary market milk, and handles the product of 129 dairy farms, averaging about 10 cows each, located in Southborough, Northborough, Westborough and Holliston. Most of these farms, therefore, at some time during the year come properly within the requirements of this list. The method of payment of this milk is explained in the following extract from a letter from the proprietor, Mr. Robert M. Burnett: "The milk from all our farms is tested once or twice a week on delivery at the dairy, samples being taken by Professor Prescott's agent. When the milk is found to contain below 25,000 bacteria per cubic centimeter, and cows, feed, water and stable conditions are reported by Dr. J. W. Robinson as healthful and satisfactory, and the average test is not lower than 4½ per cent. butter fat, the price paid is 50 cents per can at the Deerfoot Dairy for the full yield all the year around. For any milk passing the above conditions, of good quality, testing below 4½ per cent. butter fat, we pay 45 cents per can for such proportion as we can bottle. For the balance of the milk not bottled, and for the milk from farms not meeting the conditions required for bottled milk, we pay the price agreed upon between the Milk Producers Association and the Contractors Union. For the month of December, 1912, this compact was with 129 farms averaging about 10 cows to the farm."

The foregoing list is necessarily incomplete and subject to continual change. Additional names, eligible to this list, are earnestly solicited.

List of Massachusetts Dairy Farms making Certified Milk.

NAME, LOCATION.	Owner and Manager.	Ap- proximate Number of Cows.	Certified by —	Where marketed.
Cedar Hill Farm, Waltham.	Miss Cornelia Warren, owner, Chas. Cahill, manager.	215	Cambridge Medical Commission.	Waltham, Cambridge, Boston.
Cedar Crest Farm, Waltham.	John C. Runkle, owner, Louis W. Dean, manager.	90	Cambridge Medical Commission.	North Shore, Cambridge, Boston.
Cherry Hill Farm, Beverly.	H. P. Hood & Sons, owners, O. H. Perrin, manager.	80	Medical Milk Commission of Boston.	Boston, North Shore, Lawrence.
A. D. Davis, farm, Sheffield.	A. D. Davis, owner and manager.	60	— —	A little in Great Barrington. Mostly outside of State.
Ledyard Farm, Andover.	J. A. & W. H. Gould,	50	Malden Medical Commission.	Malden.
Massachusetts Agricultural College Farm, Amherst.	Massachusetts Agricultural College Farm, J. A. Foord.	65	Medical Milk Commission of Boston.	Boston.
Oaks Farm, Cohasset.	C. W. Barron, owner, W. E. Stilwell, manager.	50	Medical Milk Commission of Cohasset.	Cohasset.
Prospect Hill Farm, Essex.	J. A. & W. H. Gould,	175	Medical Milk Commission of Boston.	Boston, Brookline, Jamaica Plain, North Shore.
W. C. White's farm, Acushnet.	Walter C. White,	28	New Bedford Medical Commission.	New Bedford.

LIST OF LOCAL MILK INSPECTORS.

Milk Inspectors for Massachusetts Cities, 1913.

Beverly,	Henry E. Dodge, 2d.
Boston,	Prof. James O. Jordan.
Brockton,	George E. Bolling.
Cambridge,	Dr. W. A. Noonan.
Chelsea,	Dr. W. S. Walkley.
Chicopee,	C. J. O'Brien.
Everett,	E. Clarence Colby.
Fall River,	Henry Boisseau.
Fitchburg,	John F. Bresnahan.
Gloucester,	Dr. George E. Watson.
Haverhill,	Dr. Homer L. Conner.
Holyoke,	Daniel P. Hartnett.
Lawrence,	Dr. J. H. Tobin.
Lowell,	Melvin F. Master.
Lynn,	George A. Flanagan.
Malden,	J. A. Sandford.
Marlborough,	John J. Cassidy.
Medford,	Winslow Joyce.
Melrose,	Caleb W. Clark, M.D.
New Bedford,	Herbert B. Hamilton, D.V.S.

Newburyport,	Dr. R. D. Hamilton.
Newton,	Arthur Hudson.
North Adams,	Henry A. Tower.
Northampton,	George R. Turner.
Pittsfield,	Eugene L. Hannon.
Quincy,	Edward J. Murphy.
Salem,	John J. McGrath.
Somerville,	Herbert E. Bowman.
Springfield,	Stephen C. Downs.
Taunton,	Lewis I. Tucker.
Waltham,	Arthur E. Stone, M.D.
Woburn,	Edward P. Kelly, M.D.
Worcester,	Gustaf L. Berg.

Milk Inspectors for Massachusetts Towns, 1913.

Adams,	Dr. A. G. Potter.
Amesbury,	E. S. Worthen.
Andover,	Franklin H. Stacey.
Arlington,	Dr. L. L. Pierce.
Attleborough,	Caleb E. Parmenter.
Barnstable,	George T. Mecarta.
Belmont,	Thomas F. Harris.
Brookline,	Frederick H. Osgood.
Canton,	R. N. Hoyt.
Clinton,	Gilman L. Chase.
Cohasset,	Dr. D. W. Gilbert, D.V.S.
Concord,	Erastus H. Smith.
Dedham,	Edward Knobel.
Easthampton,	George L. McEvoy.
Fairhaven,	Bertha F. Carl Frommel, M.D.
Framingham,	R. N. Hoyt.
Gardner,	Clifford W. Shippee.
Greenfield,	George P. Moore.
Hudson,	Dr. A. L. Cundall.
Lancaster,	George E. Howe.
Leominster,	William H. Dodge.
Ludlow,	A. L. Bennett, D.V.S.
Marblehead,	Andrew W. Stone.
Middleborough,	T. F. Conway.
Millbury,	Arthur A. Brown.
Milton,	W. C. Tucker.
Monson,	Dr. E. W. Capen.
Needham,	R. N. Hoyt.
North Attleborough,	Hugh Gaw, V.S.
Palmer,	Edward P. Brown.
Peabody,	H. S. Pomeroy, M.D.
Plainville,	John C. Eiden.

Reading,	C. H. Playden, M.D.
Revere,	Joseph E. Lamb.
Salisbury,	John H. Pike.
Southbridge,	Albert R. Brown.
South Framingham,	Dr. J. H. McCann.
South Hadley Falls,	George F. Boudreau.
Spencer,	James A. Spencer.
Stoneham,	George H. Allen.
Swampscott,	Herbert D. Smith.
Wakefield,	Harry A. Simmonds.
Ware,	Fred E. Marsh.
Watertown,	Luther W. Simmonds.
Wellesley,	R. N. Hoyt.
Westborough,	Charles H. Reed.
Westfield,	William H. Porter.
Weston,	R. N. Hoyt.
West Springfield,	Norman T. Smith.
Williamstown,	G. S. Jordan, V.S.
Winchendon,	Dr. G. W. Stanbridge.
Winchester,	Morris Dineen.
Winthrop,	Smith A. Mowray.

CREAMERIES, MILK DEPOTS, ETC.

Co-operative Creameries.

NUMBER AND LOCATION.	Name.	Superintendent or Manager.
1. Ashfield,	Ashfield Creamery,	William Hunter, manager.
2. Belchertown,	Belchertown Creamery,	M. G. Ward, president.
3. Cummington,	Cummington Creamery,	D. C. Morey, superintendent.
4. Easthampton,	Hampton Creamery,	W. H. Wright, treasurer.
5. Egremont (P. O. Great Barrington).	Egremont Creamery,	E. G. Tyrell, manager.
6. Monterey,	Berkshire Hills Creamery,	F. A. Campbell, treasurer.
7. Shelburne,	Shelburne Creamery,	Ira Barnard, manager.
8. Westfield,	Wyben Springs Creamery,	C. H. Kelso, manager.

Proprietary Creameries.

NUMBER AND LOCATION.	Name.	Owner or Manager.
1. Amherst,	Amherst Creamery Company,	R. W. Pease, manager.
2. Amherst,	Fort River Creamery,	Clarence M. Wood, manager (estate of E. A. King, owner).
3. Brimfield,	Crystal Brook Creamery,	F. N. Lawrence, proprietor.
4. Groton,	Lawrence Creamery,	Myron P. Swallow, manager.
5. Heath,	Cold Spring Creamery,	I. W. Stetson & Son.
6. Hinsdale,	Hinsdale Creamery,	Walter C. Solomon, proprietor.
7. Marlborough,	Este's Creamery,	F. F. Este, proprietor.

Educational.

LOCATION.	Name.	Manager.
Amherst,	Dairy Industry Course, Massachusetts Agricultural College.	W. P. B. Lockwood, professor in charge.

Principal Milk-distributing Depots.

NAME.	Location.	Manager.
Acton Farms Milk Company.	Somerville, Windsor Street, . .	Arthur B. Parker, treasurer.
Alden Brothers Company, Oak Grove Farm, Waumet Farm.	Boston office, 1171 Tremont Street, depot, 24-28 Duncan Street.	Charles L. Alden, president, John Alden, treasurer.
Anderson Brothers, . .	Worcester, Eckman Street, . .	Anderson Bros.
Boston Condensed Milk Company.	Boston, 484 Rutherford Avenue, .	W. A. Graustein.
Brigham, C., Company, .	Cambridge, 158 Massachusetts Avenue.	John K. Whiting.
Brigham, C., Company, .	Worcester, 9 Howard Street, . .	C. Brigham Company.
Deerfoot Farms Dairy, .	Boston office, 9 Bosworth Street, depots at Northborough and Southborough.	S. H. Howes.
Elm Farm Milk Company,	Boston, Wales Place,	James H. Knapp, treasurer.
Hood, H. P., & Sons, .	Boston, 494 Rutherford Avenue; branches, 24 Anson Street, Forest Hills, 886 Broadway, Chelsea. Lynn, 193 Alley Street,	Charles H. Hood.
	Malden, 425 Main Street, . .	
	Watertown, 479 Pleasant Street, .	
	Lawrence, 629 Common Street, .	
Learned, G. S. (Fitchburg Creamery).	Fitchburg, 26 Cushing Street, .	G. S. Learned.
Newhall, J. A.,	Newburyport, 32 Munroe Street, .	J. A. Newhall.
Perry, A. D.,	Worcester, Kansas Street, . .	A. D. Perry.
Prentice, H. H., & Co. (Berkshire Creamery).	Pittsfield, Crane Avenue, . .	H. H. Prentice.
Somers Creamery Company,	Springfield, 178 Dwight Street, .	W. M. Cushman.
Springfield Creamery, .	Springfield, Main Street, . .	F. B. Allen, proprietor.
Tait Brothers,	Springfield, 37 Vinton Street, .	Tait Brothers, proprietors.
Wachusett Creamery, .	Worcester, 6 Lincoln Street, . .	E. H. Thayer & Co., proprietors.
Whiting, D., & Sons, .	Boston, 570 Rutherford Avenue, .	George Whiting.

Milk Laboratory.

Walker-Gordon Laboratory,	Boston, 793 Boylston Street, .	George W. Franklin.
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Receiving Depots for Milk, for Shipments to New York City.

The Borden Company of New York.	West Stockbridge,	Thomas Roberts.
Willow Brook Dairy Company.	Sheffield,	Frank Percy.

ENCOURAGEMENT OF DAIRYING EXPENSES, AUGUST TO NOVEMBER.

Printing,	\$51 18
Agents: compensation,	183 35
Agents: expenses,	426 29
Judges: expenses,	24 45
Photography,	55 80
Supplies,	93 74
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Total expenses,	\$834 81
Prizes,	3,000 00
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Total expenditures,	\$3,834 81

REGULAR BUREAU EXPENSES.

The following is a classified statement of the expenses for the year ending Nov. 30, 1913:—

Bureau: compensation and traveling expenses,	\$496 36
Agents: compensation,	3,010 62
Agents: traveling expenses and samples purchased,	2,612 63
General agent: traveling and necessary expenses,	263 33
Analysts: analyses, tests, court attendance,	929 50
Printing and supplies,	511 06
Educational,	176 50
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Total,	\$8,000 00

P. M. HARWOOD,
General Agent.

Accepted and adopted as the report of the Dairy Bureau.

CHARLES M. GARDNER.
GEORGE W. TRULL.
O. E. BRADWAY.

